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IMAGES IN CARDIOLOGY

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Left subclavian artery and left anterior descending coronary artery stenoses: obstacles to the left internal mammary artery

A 77 year old man, having previously undergone triple vessel coronary artery bypass (CABG) surgery with a left internal mammary graft (LIMAG) to the left anterior descending (LAD), saphenous vein grafts (SVG) to the obtuse marginal (OM) and circumflex (Cx) branches, presented with an anterior acute coronary syndrome. Coronary angiography revealed an occluded Cx-SVG graft and patent OM-SVG. There was considerable difficulty in selectively intubating the LIMAG; suboptimal images suggested complete occlusion of a relatively small calibre LAD beyond the insertion of the LIMAG (panel A). A subsequent pullback pressure gradient (60 mm Hg) across the left subclavian artery (LSCA) and arch aortogram revealed a significant LSCA stenosis (panel B). At this stage the LSCA stenosis was dilated with an 8 mm diameter balloon by a vascular radiologist, enabling selective catheterisation of the LIMAG and enhanced visualisation of the LIMAG-distal LAD (panel C). It was then apparent that there was subtotal occlusion of the LAD with minimal antegrade flow. In light of the clinical presentation, the LAD was recanalised by percutaneous transluminal coronary angioplasty (PTCA) and stenting via the LIMAG (panel D). The patient has remained asymptomatic since. This case highlights the importance of pursuing the acquisition of selective images of all vessels at the time of coronary angiography particularly in CABG patients since, in this instance, discovery and then treatment of the LSCA stenosis undoubtedly improved flow and hence visualisation of the LIMAG-LAD system. This certainly facilitated successful PTCA of the culprit LAD lesion which led to symptom resolution.

(A) Initial appearance of the left internal mammary graft-left anterior descending (LIMAG-LAD) system with a non-selective injection suggesting an occluded LAD beyond the graft anastomosis (arrow). (B) Subsequent arch aortogram demonstrating a significant flow limiting left subclavian artery (LSCA) stenosis (arrow).

(C) Successful balloon dilatation of the LSCA stenosis. (D) Final injection of the LIMAG following coronary angioplasty and stenting of the LAD.

S Patel
J Coltart
T Sabharwal

sundip.patel@gstt.shames.nhs.uk

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